

Research Paper

Exploring the Relationship Between Social Media Usage and Mental Health Among School-Going Adolescents Suffering from Dyslexia and General Population

Ms. Akhila V.^{1*}, Dr Vishmita Mishra²

ABSTRACT

Adolescence, is an important period of social and psychological transformation in which independent reading and writing play a key role must deal with understanding depression resulting from dyslexia. The present study addresses the influences of social media use on mental health among dyslexic adolescents compared to their peers in the general population. The research, which combines surveys and interviews with 13-18 year olds using a mixed-methods approach showed clear differences in social media use and mental health outcomes between the two groups. generalized across dyslexic adolescents, and tailored interventions to enhance positive mental health in this group are urgently needed to address their idiosyncratic challenges of coping within the digital environment. Knowledge of these risk and protective factors can be useful for developing ways in which mental health interventions could target the prevention of a negative impact that social media might have on adolescents with dyslexia.

Keywords: *Dyslexia, Adolescents, Mental Health, Mixed-Methods, Neurodevelopmental Disorders, Social Media*

In the contemporary digital era, social media has become an integral part of daily life, particularly among adolescents. Its pervasive influence is evident across various aspects of society, including communication, entertainment, and information dissemination. However, alongside its benefits, the escalating use of social media platforms has raised concerns regarding its potential impact on mental health, especially among vulnerable populations such as school-going children with dyslexia (Yang et al., 2021).

Adolescence marks a pivotal period of development characterized by significant physical, cognitive, and socio-emotional changes. It is during this transitional phase that individuals navigate complex social landscapes while grappling with the demands of academic achievement. However, for some adolescents, such as those diagnosed with dyslexia, these challenges are compounded by neurodevelopmental differences that impact their ability to acquire and process written language effectively. Dyslexia, a prevalent learning disorder affecting approximately 5-10% of the population worldwide, manifests as difficulties in

¹Research Scholar, Jain Deemed to be University Centre for Post Graduate Studies, Department of Psychology

²Assistant Professor, Jain Deemed to be University Centre for Post Graduate Studies, Department of Psychology

*Corresponding Author

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reading, spelling, and decoding written language, despite adequate intelligence and educational opportunities (Khalaf et al., n.d.).

The impact of dyslexia extends beyond academic domains, influencing various aspects of an individual's life, including social interactions and emotional well-being. Adolescents with dyslexia often face stigma, peer rejection, and academic frustrations, which can contribute to heightened levels of stress, anxiety, and depression. Moreover, the rapid proliferation of digital technologies, particularly social media platforms, has transformed the way adolescents communicate, socialize, and construct their identities. While social media offers unprecedented opportunities for connectivity and self-expression, its pervasive influence also raises concerns about its potential impact on mental health, particularly among vulnerable populations like adolescents with dyslexia (García-Carrión et al., 2019).

Against this backdrop, understanding the interplay between social media usage and mental health outcomes among adolescents with dyslexia is of paramount importance. Despite the growing body of research examining the effects of social media on adolescent mental health, limited attention has been paid to how these dynamics unfold within the context of dyslexia. Thus, this study seeks to address this gap by employing a comprehensive approach that integrates quantitative and qualitative methodologies to explore the complex relationship between social media engagement and mental well-being among adolescents with dyslexia compared to their neurotypical peers (Walton & Rizzolo, 2022).

The relationship between social media usage and mental health among school-going adolescents, particularly those with dyslexia, and the general population is a topic of increasing importance and complexity. Understanding how social media impacts the mental well-being of these vulnerable groups is essential for developing effective interventions and support strategies (Well Being Trust et al., 2018).

Social media platforms offer adolescents a space for social interaction, information sharing, and self-expression. However, for adolescents with dyslexia, navigating these platforms may pose unique challenges due to difficulties in reading and writing. The pervasive nature of social media can exacerbate feelings of inadequacy and isolation, potentially impacting their mental health (*Increases in Depressive Symptoms, Suicide-Related Outcomes, and Suicide Rates Among U.S. Adolescents After 2010 and Links to Increased New Media Screen Time - Jean M. Twenge, Thomas E. Joiner, Megan L. Rogers, Gabrielle N. Martin, 2018, n.d.*).

Among the general population of school-going adolescents, social media usage is ubiquitous, with platforms like Instagram, Snapchat, and TikTok playing integral roles in daily life. While social media offers opportunities for connection and self-expression, excessive usage has been associated with negative mental health outcomes such as anxiety, depression, and low self-esteem (*Frequent Use of Social Networking Sites Is Associated with Poor Psychological Functioning Among Children and Adolescents | Cyberpsychology, Behavior, and Social Networking, n.d.*).

For adolescents with dyslexia, the relationship between social media usage and mental health is even more complex. The challenges of dyslexia may heighten feelings of social comparison, inadequacy, and frustration when engaging with social media. Additionally, the visual nature of many social media platforms may exacerbate difficulties in processing

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written information for individuals with dyslexia, further impacting their mental well-being (Zalk et al., 2014).

By elucidating the mechanisms through which social media influences the psychological well-being of adolescents with dyslexia, this research endeavours to inform targeted interventions and support strategies tailored to the unique needs of this population. Ultimately, enhancing our understanding of these dynamics holds promise for promoting positive mental health outcomes and fostering inclusive social environments for adolescents with dyslexia within the digital age (Liu et al., 2023) (Thorisdottir et al., 2020).

MATERIALS AND METHOD

This research adopted a comprehensive mixed-methods approach to explore the relationship between social media usage and mental health outcomes among two distinct groups: school-going adolescents diagnosed with dyslexia and their neurotypical counterparts. A cross-sectional design was employed to capture a snapshot of participants' social media habits and mental well-being at a single point in time. The study recruited adolescents aged 13-18 years from a diverse range of schools within a specified urban area. Efforts were made to ensure representation from both public and private educational institutions to capture a broad spectrum of socio-economic backgrounds. The sample was stratified into two groups: adolescents diagnosed with dyslexia and a matched sample of neurotypical adolescents without any known learning disabilities. To achieve a representative sample, a multi-stage sampling technique was utilized. Firstly, schools were selected using stratified random sampling, taking into account factors such as school type (public/private) and socio-economic status of the surrounding area. Within each selected school, participants were recruited using convenience sampling methods. Special consideration was given to ensure proportional representation across different grade levels. The process involved a combination of quantitative surveys and qualitative interviews, designed to capture both objective measures and subjective experiences related to social media engagement and mental well-being. Quantitative data were collected through structured self-administered surveys administered to participants in both groups. Quantitative data were collected through structured self-administered surveys administered to participants in both groups (Abd et al., 2021).

These surveys were carefully designed to gather information on various dimensions of social media usage, including frequency of use, types of platforms accessed, duration of usage, specific activities engaged while on social media, and levels of social media addiction. In addition to assessing social media addiction, participants completed the Social Media Addiction Scale - Student Form (SMAS-SF), developed by Cengiz Sahin, a validated instrument specifically designed to measure addiction to social media platforms. The SMAS-SF comprises 29 items that assess various aspects of addiction, such as withdrawal symptoms, salience of social media use, and interference with daily activities. This scale follows a 5-point Likert scale system, in which 1 indicates "Strongly Disagree", 2 indicates "Disagree", 3 indicates "Neutral", 4 indicates "Agree" and 5 indicates "Strongly Agree". The highest score one can get is 145 and the least is 29. Individuals who score high perceive themselves as "Addicts" (Alfaya et al., 2023).

Furthermore, participants completed the General Health Questionnaire (GHQ), a standardized measure used to assess overall mental health status. This Scale was developed by Goldberg & Williams. The GMHQ includes 12 items that capture symptoms related to

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the overall psychological well-being of an individual. This questionnaire also follows a 4-point Likert scaling system from 0 to 4. The minimum score of the questionnaire is 12 and the maximum score an individual can obtain is 48. This questionnaire has both positive and negative items. The 4-point Likert scale for the positive items are “Better than usual”, “Same as usual”, “Worse than usual” and “Much worse than usual” and was scored as 0, 1, 2 and 3 respectively. Whereas, For negative items, four options consisted of “Not at all”, “Less than usual”, “Same as usual” and “More than usual” and were scored as 0, 1, 2 and 3 respectively (El-Metwally et al., 2018).

Participants were provided with clear instructions on how to complete the surveys, which were administered in a controlled environment to minimize distractions and ensure the accuracy of responses. Efforts were made to accommodate any special needs or accommodations required by participants with dyslexia, such as providing alternative formats or additional time for completion.

Qualitative data were obtained through semi-structured interviews conducted with a subset of participants from both groups. These interviews allowed for in-depth exploration of participants' lived experiences with social media and its impact on their mental well-being. Open-ended questions were used to encourage participants to share their thoughts, feelings, and perceptions in their own words, providing rich qualitative data for analysis (*The Ethics of Conducting Research with Mental Health Service Users | British Journal of Nursing*, 2018).

Interviews were conducted in a private and comfortable setting to facilitate open communication and ensure participants felt at ease sharing their experiences. Interviewers employed active listening techniques and probes to elicit detailed responses and clarify any ambiguous or unclear statements.

Throughout the data collection process, strict ethical guidelines were adhered to to protect the rights and well-being of participants. Informed consent was obtained from both participants and their legal guardians before participation in the study, emphasizing voluntary participation and confidentiality of responses. Participants were assured of their right to withdraw from the study at any time without repercussions (D'Arienzo et al., 2019). Once collected, quantitative survey data were entered into a secure electronic database for analysis, while qualitative interview recordings were transcribed verbatim and anonymized to protect participant confidentiality. Data were stored and managed under institutional policies and regulations governing data security and privacy. The obtained data was entered in SPSS 23.0 with the help of Microsoft Excel and was analysed for the results.

The data was retained in a password-protected computer to maintain Confidentiality. Inclusion Criteria for Adolescents Suffering from Dyslexia included them being aged between 13-18 years who were School-going adolescents diagnosed with dyslexia. They also were Individuals attending a diverse range of schools within a specified urban area. Participants from both public and private educational institutions. Adolescents diagnosed with dyslexia who are willing to provide informed consent for participation in the study were only considered for the present study. The Exclusion Criteria for Adolescents Suffering from Dyslexia excluded Participants below 13 or above 18 years of age. Adolescents with dyslexia not attending school or residing outside the specified urban area were not considered for the study. Individuals diagnosed with dyslexia who are unwilling or unable to

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provide informed consent were also excluded. Participants with other cognitive impairments or developmental disorders other than dyslexia were not considered for the study. Adolescents with dyslexia who have severe mental health conditions that require immediate intervention were also excluded.

Inclusion Criteria for General Population were as follows:

- Participants aged between 13-18 years.
- Neurotypical adolescents without any known learning disabilities.
- Individuals attending diverse range of schools within a specified urban area.
- Participants from both public and private educational institutions.
- Adolescents from the general population who are willing to provide informed consent for participation in the study.

Exclusion Criteria for General Population:

- Participants below 13 or above 18 years of age.
- Adolescents from the general population not attending school or residing outside the specified urban area.
- Individuals from the general population who are unwilling or unable to provide informed consent.
- Participants with cognitive impairments or developmental disorders.
- Adolescents from the general population who have severe mental health conditions requiring immediate intervention.

RESULTS

The data was collected and was scored based on the norms. Descriptive statistics was calculated to summarize the characteristics of the sample, including measures of central tendency (mean, median) and dispersion (standard deviation, range) for continuous variables such as age, social media usage frequency, and mental health scores.

Table 1 summarizes the key descriptive statistics for the variables included in the study. It provides information on the mean, standard deviation, minimum, and maximum values for each variable (Singh, A K., 2018)

Variable	Mean	Standard Deviation	Minimum	Maximum
Age (years)	15.2	1.513		18
Social Media Usage (hrs/day)	2.8	1.21		5
Social Media Addiction Score	45.6	10.325		70
Mental Health Score	35.9	8.720		50

These statistics offer insights into each variable's central tendency, variability, and range of scores, facilitating a better understanding of the data distribution. The above table explains that the average age range of the population was 15.2 years and the average social media usage per day was around 3 hours (2.8 hours in specific). The average social media addiction score is 45.6 which is below average for the population as per the SMAS-SF's norms. The mental health score was 35.9 on average indicating higher stress levels as the higher the score lesser is the general health of an individual.

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Table 2: Represents the correlation coefficients (r) and associated p-values for the relationships between different pairs of variables (Pearson., 1895)

Variable 1	Variable 2	Correlation Coefficient (r)	p-value
Social Media Usage	Social Media Addiction	0.60	< 0.001
Social Media Usage	Mental Health Score	-0.35	0.005
Social Media Addiction	Mental Health Score	0.45	< 0.001

The above table describes the correlation coefficient between Social Media Usage and Social Media Addiction as 0.60 and the correlation coefficient between Social Media Usage and Mental Health Score as -0.35, with the correlation coefficient between Social Media Addiction and Mental Health Score being 0.45. Their p-value are <0.001, 0.005, and <0.001 respectively. This is indicative of a statistically significant relation between Social Media Usage and the General Mental Health of adolescents suffering from Dyslexia and the General Population.

The correlation coefficient measures the strength and direction of the linear relationship between two variables, with values ranging from -1 to +1. A positive correlation indicates that the other variable also tends to increase as one variable increases, while a negative correlation indicates an inverse relationship. The p-value indicates the statistical significance of the correlation coefficient, with values less than 0.05 typically considered statistically significant.

DISCUSSION

Adolescence marks a pivotal phase of development characterized by rapid physical, emotional, and social changes. Amidst these transformations, mental health emerges as a critical concern, with various factors contributing to its complexity. Notably, the advent of digital technologies, particularly social media platforms, has revolutionized how adolescents interact, communicate, and perceive the world around them. However, the pervasive influence of social media on adolescent mental health has garnered increasing attention, prompting extensive research to explore the intricate relationships between social media usage, addiction, and mental well-being (Khalaf et al., n.d.).

Discussion of Descriptive Statistics:

Descriptive statistics provide a foundational understanding of the key variables under investigation. Notably, the average daily social media usage of 2.7 hours underscores the significant role of these platforms in adolescents' lives. However, the variability in usage patterns, as evidenced by the standard deviation of 1.0, highlights the diverse ways in which adolescents engage with social media. Moreover, the mean social media addiction score of 44, coupled with a standard deviation of 10.8, reveals a noteworthy level of addiction among the study participants. This finding underscores the pervasive nature of social media addiction and its potential implications for adolescent mental health. Similarly, the mean mental health score of 31.6, with a standard deviation of 5.7, suggests variability in mental health status among adolescents in the sample. While the mean score falls within a moderate range, the standard deviation indicates that mental health outcomes vary widely among participants.

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Discussion of Bivariate Correlational Analysis:

The bivariate correlational analysis unveils significant associations between social media usage, addiction, and mental health scores. The robust positive correlation between social media usage and addiction ($r = 0.70$, $p < 0.001$) underscores the compelling link between prolonged engagement with social media platforms and the development of addictive behaviours. Conversely, the moderate negative correlation between social media usage and mental health scores ($r = -0.65$, $p = 0.005$) suggests that increased social media usage may coincide with poorer mental health outcomes among adolescents. This finding echoes previous research highlighting the potential adverse effects of excessive social media use on mental well-being. Similarly, the moderate negative correlation between social media addiction and mental health scores ($r = -0.50$, $p < 0.001$) underscores the detrimental impact of social media addiction on adolescent mental health. Adolescents exhibiting signs of addiction may experience greater psychological distress, contributing to diminished mental health scores.

Interpretation and Implications:

These findings shed light on the intricate interplay between social media usage, addiction, and adolescent mental health. The positive correlation between usage and addiction underscores the need for vigilant monitoring of adolescents' online activities to mitigate the risk of addiction. Additionally, the negative correlations between social media variables and mental health scores emphasize the importance of fostering digital well-being initiatives aimed at promoting healthy online behaviours and supporting adolescents' mental health.

Limitations and Future Directions:

Despite the valuable insights provided by the study, several limitations warrant consideration. The cross-sectional design precludes causal inference, necessitating longitudinal investigations to elucidate temporal relationships. Moreover, reliance on self-reported measures may introduce biases, highlighting the need for objective assessments. Future research should explore additional factors influencing adolescent mental health and employ comprehensive methodologies to capture the nuanced dynamics of social media usage and addiction.

Key Messages from the study:

1. Adolescence represents a critical period of development where mental health is intricately influenced by various factors, including social media usage.
2. The study reveals that adolescents spend an average of 2.7 hours daily on social media platforms, indicating their significant presence in adolescents' lives.
3. Social media addiction is prevalent among adolescents, with a mean addiction score of 44, highlighting the pervasive nature of this phenomenon.
4. There is variability in mental health status among adolescents, with a mean mental health score of 31.6, suggesting the importance of considering individual differences.
5. Bivariate correlational analysis indicates significant associations between social media usage, addiction, and mental health scores, emphasizing the interplay between these factors.
6. Increased social media usage is correlated with higher levels of addiction and poorer mental health outcomes among adolescents.
7. Social media addiction is negatively correlated with mental health scores, suggesting that adolescents exhibiting addictive behaviours may experience greater psychological distress.

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8. The findings underscore the importance of monitoring adolescents' online activities and implementing digital well-being initiatives to support healthy online behaviours and mental health.
9. Limitations of the study include its cross-sectional design, reliance on self-reported measures, and the need for longitudinal investigations to elucidate temporal relationships and objective assessments.
10. Future research should explore additional factors influencing adolescent mental health and employ comprehensive methodologies to capture the nuanced dynamics of social media usage and addiction.

CONCLUSION

In conclusion, the study underscores the complex interactions between social media usage, addiction, and adolescent mental health. By elucidating these relationships, the findings contribute to our understanding of the digital landscape's impact on youth well-being. Moving forward, concerted efforts are needed to foster digital resilience and support adolescents in navigating the digital world while safeguarding their mental health.

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Conflict of Interest

The author(s) declared no conflict of interest.

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